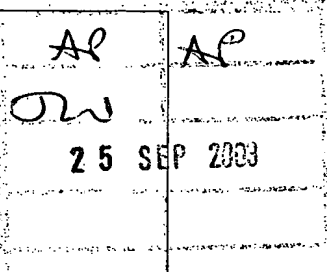


PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

WRITTEN OPINION
(PCT Rule 66)

Date of mailing
(day/month/year)

23.09.2003

Applicant's or agent's file reference
P/62303/u18

REPLY DUE

within 3 month(s)
from the above date of mailing

International application No.
PCT/GB02/05721

International filing date (day/month/year)
17.12.2002

Priority date (day/month/year)
04.01.2002

International Patent Classification (IPC) or both national classification and IPC
H04J14/02

Applicant
MARCONI COMMUNICATIONS LIMITED et al

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 04.05.2004

Name and mailing address of the international preliminary examining authority:



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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-7 as originally filed

Claims, Numbers

1-8 as originally filed

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

WRITTEN OPINIONInternational application No. **PCT/GB02/05721**

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this opinion.)

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,2,4,5,7,8
Inventive step (IS)	Claims	2,3,6,7,8
Industrial applicability (IA)	Claims	

2. Citations and explanations

see separate sheet

Re Item V

1. Reference is made to the following documents:

D1: US-B1-6 288 810 (MELI FAUSTO ET AL) 11 September 2001,
D2: EP-A-1 156 607 (MARCONI COMM LTD) 21 November 2001, and
D3: US-B1-6 285 479 (OKAZAKI KAZUE ET AL) 4 September 2001.

2. Lack of novelty (Article 33(2) PCT) of claims 1, 2, 4, 5, 7 and 8

- 2.1 Independent claims 1 and 5

- a. As far as claim 1 is concerned, document D1 discloses (the references in parentheses applying to this document, in particular to Figure 8 and the description thereof) an optical network node ("device" shown in Figure 8) for an n channel DWDM optical network (see "telecommunication system" of Figure 1), the node comprising an add path (the path including "965", "963" and "969") for adding an n-channel wavelength multiplex onto the network, in which some of the n channels carry signals to be added onto the network (see for instance column 18, line 58 to column 19, line 9), wherein the add path comprises an n-channel signal combiner ("multiplexer 965") for combining the n signal channels, and optical amplifier ("amplifier 966") for amplifying the output of the signal combiner, a multichannel wavelength selective filter ("selective reflection circuit 969") with variable per channel attenuation for blocking channels not carrying signals to be added to the network (see column 19, lines 5 to 9) or controlling the amplitude of the added signals, and an add coupler ("circulator 961") for coupling the add path to the network (see last mentioned passage).

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

- b. Still concerning claim 1, document D3 discloses (the references in parentheses applying to this document, in particular to Figure 11 and the description thereof) an optical network node ("ADM unit 200W" shown in Figure 11) for an n channel DWDM optical network (implicitly disclosed in Figure 11), the node comprising an add path (the path comprising "223", "224", "226", "228" and "229") for adding an n-channel

wavelength multiplex onto the network ("adding means 220"), in which some of the n channels carry signals to be added onto the network, wherein the add path comprises an n-channel signal combiner ("8x1 coupler 223") for combining the n signal channels, and optical amplifier ("amplifier 229") for amplifying the output of the signal combiner, a multichannel wavelength selective filter ("demultiplexer 224", "tunable filters 226" and "5x1 coupler 228") with variable per channel attenuation for blocking channels not carrying signals to be added to the network (see column 21, lines 64 to 67) or controlling the amplitude of the added signals, and an add coupler ("2x1 coupler 206") for coupling the add path to the network (see column 21, lines 27 to 29).

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

- c. The subject-matter of claim 5 is directed to a method as carried out by the node defined in claim 1. It is therefore disclosed in documents D1 and D3 (see same passages).

It follows that the subject-matter of claim 5 is not new (Article 33(2) PCT).

- 2.2 Document D3 further discloses the subject-matter of dependent claim 2, 7 and 8 (see "demultiplexer 224", "tunable filters 226" and "5x1 coupler 228" in Figure 11).

The subject-matter of claims 2, 7 and 8 is therefore not new (Article 33(2) PCT).

- 2.3 Documents D1 and D3 further disclose the subject-matter of dependent claim 4 (a network with at least two devices for adding and dropping as shown in Figure 8 of document D1 or in Figure 11 of document D3 is, at least implicitly, disclosed, as every network with add/drop functionality logically includes a plurality of add/drop multiplexers).

The subject-matter of claim 4 is therefore not new (Article 33(2) PCT).

- 3. Lack of inventive step (Article 33(3) PCT) of claims 2, 3, 6, 7 and 8

3.1 Starting from document D1 as closest prior art

- a. The additional features of claim 2 relate to details of the wavelength selective filter as defined in claim 1. Whereas in the device disclosed in document D1, the corresponding filter "969" is implemented as cascaded reflective filters, the filter as defined in claim 2 consists in the cooperation of a demultiplexer, a variable attenuator and a multiplexer. This solution is a simple alternative to the one chosen in document D1. It is well known from the prior art (see document D2, Figure 1, column 7, line 39 to page 8, line 11; see document D3, Figure 11, column 21, line 56 to column 22, line 11) and does not provide any significant advantage over the solution of document D1.

It follows that the subject-matter of claim 2 does not involve an inventive step (Article 33(3) PCT).

The same objection applies, for the same reason, to the subject-matter of claims 7 and 8.

- b. The additional feature of claims 3 and 6 consists in running the optical signal sources at full power. Starting from the system and method disclosed in document D1, this appears to be an obvious measure in order to increase as much as possible the difference between the power of the added data signals and the noise inherent to any optical transmission, i.e. to optimise the SNR of the signal added to the network. It is considered to be a normal design option not implying any inventive skill.

The subject-matter of claims 3 and 6 therefore does not involve an inventive step (Article 33(3) PCT).

3.2 Starting from document D3 as closest prior art

The additional feature of claims 3 and 6 consists in running the optical signal sources at full power. Starting from the system and method disclosed in document D3, this appears to be is an obvious measure in order to increase as much as possible the difference between the power of the added data signals and the noise inherent to any optical transmission, i.e. to optimise the SNR of the signal added to the network. It is considered to be a normal design option not implying any inventive skill.

The subject-matter of claims 3 and 6 therefore does not involve an inventive step (Article 33(3) PCT).

4. Remarks regarding clarity (Article 6 PCT) of claims 2, 3 and 5

- 4.1 The subject-matter of claim 2 is not clear as it refers to "the selective band pass", whereas, in claim 1, only a "multichannel wavelength selective filter" are defined.

Further, according to the description, page 6, lines 21 to 24, it appears that "and" in claim 2, last line, should be replaced with "or".

- 4.2 The subject-matter of claim 3 is not clear as it refers to "the sources", whereas no such feature is previously defined in claim 1.

- 4.3 It is not clear where the method steps defining claim 5 actually do begin. It is therefore proposed to add for instance "comprising the steps of" at the end of the first line of claim 5.

- 5.1 It is not at present apparent which part of the application could serve as a basis for a claim that would fulfill the requirements of novelty (article 33(2) PCT) and inventive step (Article 33(3) PCT).

In particular, an independent claim combining the features of claims 1 and 2 presently on file with the additional feature according to which the added signal channels are first amplified and only then filtered is not considered to involve any inventive step (Article 33(3) PCT). Starting from document D1, a reasoning along the line of 3.1.a applies. Starting from document D3, which shows first a filtering and then an amplification of the added signal channels, such an independent claim would be regarded as a fully equivalent design option, providing no advantage and not involving any inventive skill.

Should the applicant nevertheless regard some particular matter as new and involving an inventive step, he/she should also indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the

inventive significance thereof.

- 5.2 Care should be taken during revision not to add subject-matter which extends beyond the content of the application as originally filed (Article 34(2)(b) PCT). In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.